



OULUN YLIOPISTO
UNIVERSITY of OULU

OULU BUSINESS SCHOOL

Abdullah Malik

**PERSONA BASED MARKETING STRATEGIES: CREATION OF
PERSONAS THROUGH DATA ANALYTICS**

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Author Abdullah Malik		Supervisor Jari Juga	
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<p>Abstract</p> <p>In this study, we purposed a novel approach of using data analytics for persona generation. We design a process which can be adoptable for companies to enhance their marketing efforts, specifically, enabled them to focus real potential audience. To carry out our research we use company's sales data and digital analytics to generate consumer personas. These personas can be used in various actions like content creation, UX designing and creation of marketing strategies.</p> <p>The research focuses on the development of marketing strategies and analyzes the impact of those marketing strategies on conversion rate. Previously researchers worked on customer segmentation by using customer data from Google Analytics and data originated from social media analytics, however, this research focuses on giving the action-based approach to companies in order to find out their real customers and enhance their conversion rate by using all means of analytical data i.e. companies own sales data, social media analytics, and Google Analytics.</p> <p>This study adopts persona development to recognize and define potential customers. Personas are fictional but with the help of data, we can develop them more closely to a real audience. The rapidly evolving digital marketing landscape required more and more technicalities to drive result-oriented marketing strategies. In this study, we employed a qualitative methodology, which includes designing a process (framework) from digital data analytics. Some of the features of personas were extracted from data analytics obtained from Facebook insights, Google Analytics, and company's sales database while some of the qualitative feature like Bio, motivation and taglines of personas were extracted from specially designed workshop with people from company's sales and marketing department.</p> <p>This research is conducted in a company named "Quieton Oy" and the results of this research depicts the effectiveness of the process, its validity and the reliability of the process. The main objective of this thesis is to enable the creation of consumers personas based on data analytics and the efficient utilization of those personas for defining the marketing strategies.</p>			
<p>Keywords</p> <p>Online Marketing, Personas, Google Analytics, Facebook Analytics, Web analytics, Facebook Marketing, Customer Segmentation</p>			

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1 INTRODUCTION

The world is evolving with the evolution of technology. The introduction of digitalisation has brought new ways of doing businesses. According to Statista, in 2017 the total sales of e-commerce retail was recorded as 2304 Billion US dollar, whereas, it forecasted to be 4878 Billion US dollar by the end of 2021. This advancement of technology has brought tons of data which is a blessing for marketers. The formation of this data comes from the interaction of people with social media, webshops, buying patterns and interests. Marketers use this massive consumer data for understanding their potential customers. Receiving such a massive amount of data causes a lot of complexities for data-driven marketing as well. Researcher also tried to solve these complexities by providing frameworks like non-negative matrix factorization for identifying behavioral segments (An, Kwak, Jung, Salminen, & Jansen, 2018), customer segmentation integration and customised model for service predictions (Wong & Wei, 2018), persona development lifecycle (Cooper, Reimann, Cronin, & Noessel, 2014; Pruitt & Adlin, 2006) and various other. Although researchers tried to give theoretical aspects to encounter these complexities but were unable to provide an action-based approach to companies to enhance their conversions by investing a little amount of capital. Our research focuses on providing action-based marketing strategies by designing a framework for startups and micro-firms so that they will increase their rate of return (ROI).

This research uses persona creation as a method for identifying potential customers. Persona approach is traditionally used in user experience (UX) designing and is supposed to be costly and require time. In our study we emphasize on developing personas with available data from data analytics.

This thesis investigates on how companies can make personas by the help of analytical data and how companies can use that developed personas in their marketing efforts. To find the answers this novel research creates personas by using the company's sales data, Facebook Analytics and Google Analytics. The qualitative aspects of personas like motivation, persona biography and tagline were constructed from specially designed workshop with company's own people. In this way, we have proposed an

effective and efficient procedure to understand the authentic customer and designing marketing strategies according to those potential customers.

This research process includes five steps: 1) Data collection and data mining, 2) Customer segmentation, 3) Persona Creation, 4) Marketing Strategy formation, 5) Testing and optimization. The first step of our research includes the collection of data from company's webshop, Facebook Analytics, and Google Analytics. Company's sales data was very useful for locational analytics of existing customer. This data gave us understanding of which region already responding well to product. The data collected from Google Analytics and Facebook Analytics gave us valuable information regarding demographics and behavioral analysis of potential customers.

After extracting data from sources, this raw data lead us to the data mining process. The process of data mining includes simplification of data and summarization of raw data in order to detect complex relationships (Furnas, 2012). "Data mining, as we use the term, is the exploration and analysis, by automatic or semiautomatic means, of large quantities of data in order to discover meaningful patterns and rules". (Berry & Linoff, 1997). In the process of data mining classification is its integral part. The process of classification includes examining or extracting features from data and presented as newly object (Berry & Linoff, 1997). The data mining process makes datasheet simple by excluding the unwanted information from the dataset. In this way, datasheet becomes simple and easy to interpret.

The second step of our research process includes segmentation of data. As Jansen (2009) says: social media and web analytics can be used in customer segmentation. Customer segmentation approach is used to separate overall customer data relying on various segments based on specific common attributes (An et al., 2018). Segmentation approach is very commonly used across multiple industries for being relevant to a particular domain. Companies having online stores (e-commerce websites) uses customer segmentation techniques to target specific customers with content marketing and advertisements. Furthermore, customer segmentation also used to identify and to better understand the needs, wants and preferences of potential customers and addresses on how to engage more effectively with them. It also helps in the optimisation of their online campaigns, i.e. optimisation of performance metric (An et

al., 2018). The customer segmentation technique is also beneficial in identifying key attributes from which companies can separate customers into segments (Cooil, Aksoy, & Keiningham, 2008). The segmentation process is essential before making personas as it validates the identity of homogenous consumer groups. (William, 2016). Segmentation process based on the idea that customers demonstrate heterogeneity in their product purchasing preferences. McBurnie & Clutterbuck in their book "Give your company a marketing edge" states that: "Segmentation is fundamental to successful marketing strategies. Until competitors copy your segmentation, you have a competitive edge, even if you serve the segment with a standard product or service. If the product or service is specific to the segment, then your competitive advantage is multiplied" (McBurnie & Clutterbuck, 1988). The key point of doing marketing segmentation is to make consideration of consumer preferences. The preferences of consumers are composed of their multiple viewpoints to evaluate product, i.e. if someone is buying automobile then he will evaluate potential models of different cars, price ranges, acceleration, speed, and fuel consumption. (Liu, Liao, Huang, & Liao, 2019)

The third stage of the research process includes the formation of consumer persona. This phase is meant to be an integral phase of this research. "Personas 'lift' segments by providing a much richer qualitative picture of a typical 'fictional' customer within that segment, animating their personality and values" (William, 2016). Personas are fictional characters of potential customers, this concept was introduced by Cooper (2004) in his book "The inmates are running the asylum" and was introduced in design industry and then Pruitt & Adlin (2006) refine the concept of persona in their famous book "The Persona Lifecycle: Keeping People in Mind Throughout Product Design", now, it acts as a representation of actual customer as an imaginary person. We used this concept in the formation of the fictional character of potential customers. Segmentation process enables us to understand the different set of consumers. From segmentation, we get the information about where a specific group of people lives, what is their age range, where they click on a website, or sometimes their buying behaviors. Consumer persona allows us to make a deeper understanding of those homogenous groups and enables us to establish feelings with them, which helps to recognize key traits within them. (Gilliland, 2017). Multiple techniques used by marketers and researchers to make consumer personas, but in today's world, social

media is an essential tool for developing personas because of its built-in analytics tools which enable marketers with key datasets. (Gilliland, 2017). Google Analytics is also a handy tool to get information about customers and website visitors. Google Analytics provides useful information regarding gender, age, location, behaviour, devices and channels. By implementing tracking code and making funnels in Google Analytics, we can filter the most promising customers and track customer journeys as well. (Han, 2017) It is believed that 90% of the webshop sales are driven by only one type of customer, for example, young non-professional women with the age range 25-35 buy the most. These would be actionable parameters and valuable insights of customers for running targeted based advertisements. So, making consumer persona allow us to create effective and efficient strategies through which we can directly target to our most potential customers.

The fourth phase is the formation of marketing strategies, which were based on those fictional characteristics. The use of appropriate and effective marketing strategy is an essential and critical element of business success. The selection of effective marketing strategy requires knowledge of the industry, competitors, and customers. (Shaw, 2012). In 1958, Alfred Oxenfeldt defined marketing strategy in two parts: 1) definition of target markets and 2) composition of the marketing mix. According to him, these two parts are fundamentals of marketing strategy because customer targets represent the demand side of the market while marketing mix represent supply side of market. Our marketing strategy phase we concentrate on the customer targets rather than the marketing mix. Our product was in the stage of production that is why we take that decision, and we were designing marketing strategies for presales. So, we concentrate more on finding the right customer and approach them which effectiveness. We use social media marketing as for the formation of marketing strategies. Major social media platforms such as Facebook and Instagram use segmentations such as behavioral, geographical, and demographical etc. These social media platforms distribute content according to these segmentations (An et al., 2018)

In the fifth and final phase of our research process, the advertisement has been made and tested in social media platform i.e. Facebook. This stage is meant to be the implementation stage and tracking results. Optimization of campaigns was also included in this stage. Three personas were tested in this stage and were monitored

daily. After monitoring and gathering results the judgement has been made for the success of the persona. Analytics tools like Facebook Analytics and Google Analytics were used to monitor and testing of marketing campaigns in this stage.

There are two main challenges of adopting personas formation technique as described by researchers are, they require a lot of time and resources. Forrester Research surveyed persona vendors and found that an average persona investment is about \$47,000. Miaskiewicz, Sumner, & Kozar (2008) also mention the cost of making eight personas about half of million due to the complexity and diversity of potential user audience. We can resolve this problem by utilising secondary data, the case when primary data is not easily available (Cooper et al., 2014; Pruitt & Adlin, 2006). Our research critically solves these challenges by using secondary data in our research process in the utilisation of big data from the company's own sales data and data obtained from analytical tools like Facebook Analytics and Google Analytics.

This study adopted secondary data in the creation of personas and backed persona creation process from literature. The study explores the value of personas in the formation of marketing strategies across the digital landscape, and then these strategies were validated by implementing those strategies in testing stage. The success of these strategy then assessed by the rate of change in conversion rate.

1.1 Research question

The main question of this thesis is: How can data analytics be used for creating consumer personas? But more specifically

1. How we can design a process of creating personas based on data analytics?, and
2. How can we validate the process of developing personas?

Our first research question explores how we can design a procedure of creating personas from easily available data extracted from the company's own webshops sales data sheet and social media analytical tool I.e Facebook Analytics and Google Analytics. We aid our logical reasoning with persona literature for best practices.

To solve our second research question, we make marketing strategies based on generated personas and then test those personas. The validity of the process depends on the successfulness of personas development and marketing campaigns.

1.2 Approach

This case study produces an archetypes for the creation of personas to solve the business problem of getting a higher return on investment from marketing campaigns. These archetypes are then evaluated by testing personas through marketing strategies. The theories regarding the formation of personas from the literature are adopted. This study provides four created personas and then evaluates three personas in the problem space.

The objective of this case study is to see whether personas created through data analytics can be reliable to form marketing strategies. This study facilitates companies to get cost effectiveness in their marketing efforts and helps to stay focused on their marketing strategies. One of the major problem companies are facing is that large investment is made in the wrong audience which causes high damage to companies ROI. To improve return on investment (ROI), targeted ads to selected consumers (based on consumer demographics) is the best choice.

This case study helps companies to enhance their marketing efforts by creating personas and targets their potential customers with targeted ads. This case study was carried out in a company named “QuietOn Ltd.” and focuses on determining their potential customers. As this study was a part of company project so we face limitation of sharing internal company consumer data in this report.

This exploratory study is a descriptive case study using multiple data sources. According to Yin (1993) case study is used when multiple source of data is used and specially when it comes to answers “how” and “why” questions. This is a qualitative case study in which we develop a process (framework) for companies so that they can make personas and marketing strategies by using freely available online data. We extract demographic and behavioral features from Google Analytics and Facebook

insights (Facebook Analytics). Features like motivation, biography, and taglines comes from specially designed workshop within company.

The study is based on data extracted from QuietOn's webshop sales database and analytical tools like Facebook Insights (Facebook Analytics) and Google Analytics. Data were then processed to identify patterns, make segmentation and find meanings. Finding were put into context and comparison were done with existing literature.

A special workshop was designed with company's sales and marketing teams in order to get qualitative aspects of personas. Personas should be some fact base, humanized, and attract attention (Stanton, 2011), Keeping these in mind, we use third party software to make profiles of personas i.e. xtensio.

Finally, the study aims to contribute both the academic world and business world through its findings. At the end of this research, this study provides recommendations and suggest new directions for future potential work in the field of personal research. This study also provides managerial implication for managers in a business environment.

1.3 Structure of the thesis

Chapter 1 provides introduction along with motivation for the study and gives research questions. Chapter 2 is based on theoretical literature on segmentation and personas with framework of the thesis. Chapter 3 focuses on research methodologies. Chapter 4 highlights the process of segmentation, and creation of personas, making marketing strategies and testing. Chapter 5 targets the implications and limitations of the study and ends with conclusions.

Table 1.1: The structure of the thesis

Chapter	Topic
Chapter 1	Introduction and Motivation
Chapter 2	Literature
Chapter 3	Methodology

Chapter 4	Research Process
Chapter 5	Conclusion and Discussion

2 THEORETICAL BACKGROUND

This chapter presents literature on customer segmentation and personas. Furthermore, a chapter is divided into two sections. Section 2.1: Customer Segmentation, this section illustrates the conceptualization of customer segmentation, definition of customer segmentation, and also highlights what researchers said about the use of data for customer segmentation in a digital landscape. Section 2.2: This section illustrates personas by giving a theoretical background. In this section, conceptualization is discussed and highlights the benefits of the persona approach and also discusses the reasons why personas fail in the corporate environment.

2.1 Customer segmentation

Traditionally, in the last century, marketers have been focusing on mass marketing to manufacture, distribute and promote their product. They created the same marketing strategy for all of their consumer with the belief of building a sizeable potential market. But in recent times, the invention of digitalisation made it more complex and challenging to use mass marketing strategy. To counter this, companies fragmented their mass markets into smaller groups of segments. In this way, they target those groups with different communication messages and get a higher rate of return. The concept of “The right message to the right audience” is getting more and more adaptable for companies. (Kotler & Armstrong, 2004).

Over the recent years, it has been challenging for companies to attract all buyers they need a different approach to different customers. Different buyers have different needs and different buying practices. Companies themselves are very wide in terms of how they approach different kinds of customers and how to serve all the customers with different characteristics. Thus, companies should concentrate on particular segments rather than the whole market. They give special importance to those segments which give more profit and can deliver success. They must focus more on selecting the right customer audience, in this way they can build a more trustworthy relationship with them. Nowadays, companies tend to shift their focus from mass marketing to specific segments and target those segments. In short, companies try to identify their market

segments, select profitable segments among those and market them. (Kotler & Armstrong, 2004)

2.1.1 Origin of segmentation

According to Hultén (2007) segmentation is an important element for the company's marketing strategy. Alderson (2006) says: segmentation is among the most important concepts in marketing theory concepts as it matches supply with demand. According to Choffray & Lilien (1980) customers with akin needs and buying behaviour can be grouped so that they can receive a more homogeneous response to marketing efforts. The concept of segmentation is attributed to Smith (1956, p.6) who states that: "Market segmentation consists of viewing a heterogeneous market (one characterised by divergent demand) as a number of smaller homogeneous markets in response to differing product preferences among important market segments."

It is thought that American manufacturers developed the concept of segmentation to get rid of mass marketing from consumer markets. The idea of segmentation was initially related to economic theory where lack of homogeneity was quite evident when the competition is imperfect. In this type of situation product differentiation and market segmentation was seen consistent. (Hultén, 2007)

Market segmentation defined by McDonald & Dunbar (1998, p.10) states as "a process of splitting customers into different groups, or segments, within which customers with similar characteristics have similar needs". According to Kotler (2003, p.239) market segmentation is "dividing a market into distinct groups with distinct needs, characteristics, or behaviour who might require separate products or marketing mixes". Hunt (1991, p.176) states the importance of segmentation in marketing as: "Classificational schemata play fundamental roles in the development of discipline since they are the primary means for organising phenomena into classes or groups that are amenable to systematic investigation and theory development".

2.1.2 Advantages of segmentation

The advantages of segmentation were widely acknowledged by prior practitioners and are well documented in academic literature as well. The underlying assumption of segmentation is that the audience is too broad, having too many customers; thus their needs and buying behaviours are varied too. In fact, they are too varied to be satisfied or addressed by a single or identical offering. (Dibb, 2001) The common aim of segmentation is to identify the homogeneity among customers so that companies can serve their customers in the best way.

Customer segmentation helps to ensure that member of targeted audiences responds to marketing efforts in the same way. This allows the firm to apply marketing strategies more effectively and efficiently and concentrate more on selected segments. (Cooil, Aksoy, & Keiningham, 2008) There are many other benefits of segmentation which include the company's modification of product or services according to the needs and wants of potential customer segment and make it more appealing and adaptable to those segments. It also helps in undermining the selection of distribution and communication channels so that the company will get a competitive advantage. Segmentation also gives a clear picture of potential competitors and help the company for competitor intelligence. (Kotler, 2003).

Segmentation serves as a fundamental element in successful marketing strategies. A company has a competitive advantage even they are serving their segment with the standard product until its competitor copies its segments. If a company stick to its segmentation and make product or services in accordance with its segments then this strategy will act as a multiplier in its competitive advantage. (McBurnie & Clutterbuck, 1988)

McDonald & Dunbar (1998, p.15-16) mention five advantages of segmentation as:

- 1) Recognizing the differences in customers is the key element in successful marketing. It helps companies to get closer to the needs of the customer.

- 2) Segmentation leads companies to find their niche. When companies go deeper in segmentation and meet customer needs with a company's product or service they can dominate within the segment which is not possible in the whole market.
- 3) Segmentation allows companies to see which segment is giving high returns and have a tremendous competitive advantage. In this way, they can allocate more resources into that specific segment.
- 4) Segmentation helps companies to consider market different than their competitors.
- 5)

The company can be marketed as a specialised market segment if customers are better understood, giving products or services an edge over competitors products.

According to Storbacka (1997), the tactical or operational level segmentation gives a deeper understanding of the customer, with which companies can enhance better relationships with customers.

2.1.3 Criteria of segmentation

In literature, we find some of the discussion regarding what is the criteria of effective segmentation. Previous work by researchers gives at least seven factors of standardising effective segmentation. These factors are actionability, identifiability, responsiveness, accessibility, stability, practicality and sustainability. (Kotler & Armstrong, 2004; Kotler & Keller, 2012; McDonald & Dunbar, 1998; Wedel & Kamakura, 2000)

- 1) Actionability: The segments are functional if effective programs can be designed to attract and serve the segments. (Kotler & Armstrong, 2004)
- 2) Identifiability: Distinct groups can be identified using defined segmentation bases using variables that are easy to measure (Wedel & Kamakura, 2000).

Kotler & Armstrong (2004) add that those group should be able to measure by purchasing power, size and profile. Moreover, McDonald & Dunbar (1998) add that segmentation should be based on unique characteristics.

- 3) Responsiveness: Marketing strategies are only useful and effective if the segments are homogenous and have the ability to responds uniquely to those strategies. (Wedel & Kamakura, 2000)
- 4) Accessibility: The market segment should be accessible and easy to reach utilizing marketing channels. (Wedel & Kamakura, 2000)
- 5) Stability: Segments should be stable. The success of a marketing strategy is based on the stability of the target segment. (Wedel & Kamakura, 2000)
- 6) Practicality: The segments should serve as a guide for the identification of marketing programs. (Wedel & Kamakura, 2000)
- 7) Sustainability: To make marketing efforts more profitable the segments should be the representation of a larger pool of people (Kotler & Armstrong, 2004; Wedel & Kamakura, 2000). Each segment has enough potential size and purchasing power. (McDonald & Dunbar, 2012)

2.1.4 Segmentation in a digital landscape

Over the past years, digitalisation intensify a huge growth in the availability of online consumer data. Academic literature supported the fact that majority of customers use internet on a regular basis in multiple times for multiple purposes (Keng Kau, Tang, & Ghose, 2003; Mathwick, 2002; PewResearch, 2018). Companies use this available consumer data to unify the attributes and characteristics of consumers in the form of groups. This enhancement of freely available consumer data and data coming from various third-party tools about consumers give companies the ability to build multiple groups. These groups are known as consumer segments (Jenkinson, 1994).

Companies make consumer segments and convey their communication message accordingly. Researchers also have seen variety in data and employ different methods for customer segmentation. (Firat, 1997; Marcus, 1998; Shapiro, Benson, Bonoma,

1984). For example, Ortiz-Cordova & Jansen (2012) make consumer segments from the data coming from website visitors and highlight which segment has more potential in revenue maximisation. An et al. (2018) use consumer data to make segments which helps them to analyze behavioral interactions of customers with online content.

Researchers have used this available online data to classify the gender of visitors and classify them on the basis of behavioral segments. In this way, companies get revenue from classifying segments according to demographic attributes. (Jansen, Moore, & Carman, 2013). Data coming from social media like Facebook, Instagram and Twitter also help companies to segment their audience according to behavioural and demographic attributes of their customers. (Jansen, Sobel, & Cook, 2011). Tuna et al. (2016) identified segments from social media analytics and classified them with customer demographic attributes like gender, age and other factors.

Eastman & Iyer (2004) mention age as an important factor which explains the attitude of the consumer towards the use of the internet. Sorce, Perotti, & Widrick (2005) studied that old shoppers search for fewer products than young shoppers on the web. Mostafa (2006) found out the gender specific behavioural activities like females send more emails than males. Researchers identified young males with high internet experience, high education and higher income as the parameter of potential online shoppers. (Li, Kuo, & Rusell, 2006; Sin & Tse, 2002; Swinyard & Smith, 2003)

Shih (2004) pointed out the factor of ease in online buying and positive attitude of the customer towards e-shopping. Yee-Man, May, & Cheng (2001) highlighted two factors, technological development and venturesomeness, as a helping hand in identifying online shoppers.

The researcher has also found many techniques for classifying segments from online data, like Dursun & Caber (2016) give the technique of RFM analysis, segmenting groups based on recency, frequency and monetary. They implied this analysis to the data obtained from one hotel chain's CRM system, and results show eight customer segments. In their research, they found that the majority of customers are "lost, customers". These lost customer segments stay less, and their spending is less than other segments. RFM analysis based on customer recent purchasing pattern (recency),

how many times customers purchases (frequency) and spending pattern on those purchases (monetary).

Antoniou (2017) segmented customers from online data for cultural heritage applications. These segments were formed by extracting personality and cognitive style profiles. Kamboj, Kumar, & Rahman (2017) found positive inclination of the financial and market position of a firm which uses social media data for segmenting potential customers according to hedonic and cognitive attributes. Vijayasathya (2002) identified the positive effect of shopping orientation and product type on online shopping.

Segmentation in the digital landscape is essential to define potential markets. Companies and researchers used various methods; some are given above, to understand their actual audience characteristics. In modern times, it is essential to know your customers and target them according to their needs, wants and emotional attachments because now customers become fickle, they are more demanding and are savvy.

In digital segmentation there is no limit to segment your customer. Broadly, there are four types of segmentation: behavioural segments, lifestyle segments, demographics segments and value segments. Experian marketing services (Experian, 2012) give five parameters of doing segmentation with online data these are:

- 1) They must have similar attributes.
- 2) They must be suitably different from other segments.
- 3) Segments should be large enough to be viable.
- 4) Segments should be reachable and targetable.
- 5) Segments should be actionable.

2.1.5 Limitation in segmentation

Despite the recognised advantages and the strong academic background in segmentation, there are still problems and limitations recorded in the literature. We are listing some problems categorically.

- 1) The segment is always a compromise because not everyone within the segment wants the same thing. (Kotler, 2003)
- 2) Segmentation cost relatively much more as it requires multiple marketing strategies. (Dibb, 2001)
- 3) Segmentation is not the best solution where a segmented audience is too narrow (Dibb, 2001)
- 4) The segmentation process is also not applicable when there is instability in identified segments. (Dibb, 2001)
- 5) Problems arise when marketers do not focus on the objectives and goals of segmentation and focus too much on the bookish definition of segmentation process (Dibb, 1998)
- 6) Nowadays, market diversity and increasing customer's lifestyle diversity cause major challenges in segmentation as it leads to market fragmentation (Sheth, Sisodia, & Sharma, 2000)

In recent times, it is difficult to categorise buyer especially from traditional segmentation process due to the increasing complexity of buying behaviour (Hultén, 2007.)

2.2 Persona

Personas are detailed consumer profiles which represents specific distinct groups who share similar behavior, personalities, preferences and attitude towards specific product. According to Pruitt & Adlin (2006): “Personas are the detailed description of imaginary people constructed out of well-understood, highly specified data about real people”.

Persona generation is all about understanding customer more precisely, understanding who they are, what they want out of your product, what are their lifestyle, how they make things done, and in which context they live and work. It requires the marketer to a professional imager as well. You can take plenty of days to imaging people even then it is difficult to know whether those imaginative people are you real customers or not. But when you use data for persona creation you can strengthen your companies position by changing multi-disciplinary strategies according to your real audience. (Pruitt & Adlin, 2006)

2.2.1 Conceptualization of personality approach

Personas are consumer archetypes which are based on behavioural data. (Cooper et al., 2014; Mulder & Yaar, 2006; Pruitt & Adlin, 2006). The representation of user has been in use for strategy making from a very long time (Dreyfuss, 2003). The phenomenon of persona starts from and widely used in the user experience (UX) industry as a tool to design customer-centric products (Matthews, Judge, & Whittaker, 2012; Nielsen & Storgaard Hansen, 2014). The concept of personas was first introduced by Cooper (1999) in his book “*The Inmates Are Running the Asylum*”, he presented personas as a new way to report user data in the field of the software industry. Later, Pruitt & Adlin (2006) in their book “*The persona lifecycle*” refine the concept of personas as a representation of actual customers as an imaginary person with data.

The creation of personas is backed by the data obtained from customer segments, in this way, persona expressed beneficial uses in many other fields and in many other forms. The main addition in persona development was the addition of using

quantitative and qualitative data and data segmentation before the creation of a persona. (Pruitt & Grudin, 2003; Pruitt & Adlin, 2006).

Personas have been widely used in the area of software development (Cooper, 2004; Pruitt & Adlin, 2006), in the area of product design (Goodwin, 2001; Smith, 1956), and also in marketing (An, Kwak, Jung, Salminen, & Jansen, 2018; Revella, 2015; Stern, 1994; Wong & Wei, 2018). In the field of marketing, personas are widely used in optimization of performance metrics like an advertisement, conversion effectiveness, improving speed in processes. (An et al., 2018) In the world of literature, there are a lot of case studies (Guðjónsdóttir & Lindquist, 2008; Pruitt & Grudin, 2003) and practical literature (An et al., 2018; Cooper et al., 2014; Mulder & Yaar, 2006; Wong & Wei, 2018) of personas which help in implementation of personas in various scenarios.

2.2.2 Advantages of Persona method

Well defined consumer personas help marketers to build better marketing strategies. Developed personas help marketer in longer period of time. Personas offers companies a right prospective of consumer and create emotional bonding with them. Persona gives face to customers and help companies to identify their potential markets.

There are four main identified advantages for the persona method.

1. Persona method plays an important role in product development (Miaskiewicz & Kozar, 2011; Pruitt & Adlin, 2006; Putnam, 2010).
2. Persona helps in project management as it helps in focusing on one central theme, it helps in solving out the most important question of understanding target audience (Miaskiewicz & Kozar, 2011).
3. It helps the marketer to communicate effectively with their audience, as it enables to develop a common language about users. (An et al., 2018; Pruitt & Adlin, 2006).

4. Personas are used for humanizing big data obtained from various sources which help to create user format, it enables to understand user with more empathy and relate user with marketing efforts. (An et al., 2018; Pruitt & Adlin, 2006)

The concept of the persona is very vital in product development. There are multiple ideas in product development cycle in the beginning. Due to limited resources, it is very difficult to develop a product with every possible feature, more importantly, the question arises whether all the features and ideas satisfy one's need or not. Persona method help in focusing energies to one direction and limited the flow of ideas. (Pruitt & Adlin, 2006)

Persona method also helps in the field of marketing. Personas humanize target audience with quantitative and qualitative data, which help marketers to make content helpful in brand communication and in making precisely focused marketing strategies. Personas are the best way to transform customer-centric data into an easy-to-understand representation which help firms in decision making. (An et al., 2018)

Personas also help marketers to understand consumer behaviour and to identify end user of the product. It helps to answers the question like how people feel about themselves after using product or services. Are they more satisfied, and feel more informed? (Caballero et al., 2014)

2.2.3 Persona method in digitalization

In the digital landscape, persona method helps in understanding people (i.e audience) from the flow of data which we gather from various analytical sources, webshop visitors, and from marketing campaigns. It helps in optimizing performance metrics like sales management, effectiveness in the speed of tasks, or achieving objectives in advertisements. (An et al., 2018).

The real-time data enables in the validation process of the personas, determine whether personas represent the current customers or not (Chapman & Milham, 2006). It helps in generating digital content for various major online platforms i.e. Facebook,

Twitter, YouTube, and Instagram etc. and give ability to marketers to make perfect and matchable communication messages.(An et al., 2018).

Limited research has been found when it comes to converting online customer data into personas. It is also not very common to generate personas from online customer data and make marketing strategies according to that. In the area of marketing and advertisement marketers works in segmenting large pool of data into smaller groups or market segments. (Clarke, 2015) But in recent time there are many third-party tools (i.e. socialbakers.com) available which helps in generating persona from company's webshop consumer data (i.e visitors), they are using the data from the first stage of the sales funnel and use AI for generating personas.

Jansen et al. (2011), used data of approximately 35,000 customers from social media and maked clusters according to how they share commercial information. The research did not use persona method and stops at the segmentation process. But they assign names to those segments which become the source of identification of segments. Similarly, Zhang, Brown, & Shankar (2016) used hierarchical clustering for identifying segments of workflows from analysing customer-level clickstreams. He also gives names to those segments for recognition.

2.2.4 Why persona fails

The literature of personas mainly based on the practical implication of using persona method. The main criticism on personas is the lack of scientific evidence which claimed its benefits. But still, this method is one of the popular domains of research and practice.

Flaherty (2018) in his blog article states the following reasons for why personas fail in the corporate environment:

- 1) Personas were created but not used in practice. He mentioned the main and vital reason for persona failure is that the companies use this process and make personas but after that, they will not continue these strategies. He mentioned

that it is hard to explain and convince upper management the use of personas in the corporate world.

- 2) Leadership is quite sceptical for the use of personas. It might be because they know their customer more deeply and they feel that they know them better.
- 3) Most of the case personas are developed by few people and then they try to impose those on others.
- 4) Communication is one of the reasons for the failure of personas. People within the organization are unable to highlight the importance of personas and are not quite sure how to use them in making strategies. Giving awareness and convincing people is very important after making personas.

Pruitt & Adlin (2006) list four reasons for persona project failure as:

- 1) Personas method is not supported by leadership.
- 2) Personas are not associated with methodological data.
- 3) The use of personas is poorly communicated.
- 4) Unable to understand how to use personas after making them.

In literature, we have a couple of examples of failed projects which support the argument listed above. Rönkkö, Hellman, Kilander, & Dittrich (2004) mentioned the reason for failure as the project failed to recognize the pattern of dominance in the development process. In the case of Blomquist & Arvola (2002), personas were created but not implemented in the design process. According to them the reason of failures was the unfamiliarity of personas among the designer team and they don't know how to use them. Nielsen & Storgaard Hansen (2014) in their study found the only negative experience that companies are unaware about the usage of persona during product development process.

2.3 Framework of research

To accomplish the objectives of this research, we purpose a framework through which companies can develop personas and test them with their marketing strategies. We carried out our research in a company named “QuietOn Oy”. The framework of research is as follow:

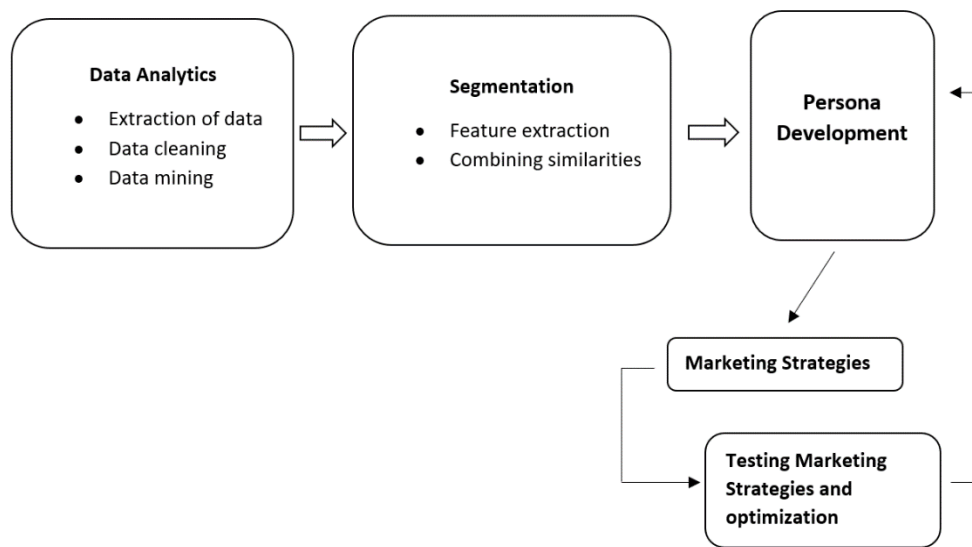


Figure 1.0: Framework of study

The first step of this framework is the extraction of consumer data. This step includes the extraction of ad hoc reports and analyzes those reports. The process of collection and analyzation of large user data reports is known as data mining (Callanan, Perri, & Tomkiewicz, 2018). In this stage, we collected consumer data from company’s webshop, Facebook Analytics and Google Analytics.

After the collection of data, the data was analyzed, and the unwanted data removed. The process of removing unwanted data is known as data cleaning, this process is very important in all form of consumer data as it helps in identifying key segments and it helps in mining the consumer data more accurately (Experian, 2015).

The second step includes a segmentation process, in this process, we segment data into various subgroups. Market segmentation defined is by McDonald & Dunbar (2012) as “a process of splitting customers into different groups, or segments, within which customers with similar characteristics have similar needs”.

The third step includes the development of a persona. “Personas are a detailed description of imaginary people constructed out of well-understood, highly specified data about real people” (Pruitt & Adlin, 2006). Persona help in understanding people (i.e audience) from the flow of data which we gather from segmentation process. (An et al., 2018)

The fourth step includes the formation of marketing strategies and testing those strategies based on developed personas. “The marketing strategy is the way in which the marketing function organises its activities to achieve profitable growth in sales at a marketing mix level” (Kotler, 2009). Marketing strategy is the comprehensive plan formulated particularly for achieving the marketing objectives of the organization. Marketing strategy is very important as it provides a competitive edge to an organization, helps in making good and services for best profit-making potential as it shares information collected from a market and it provides sales message to target audience. In a nutshell, marketing strategy provides a roadmap to an organization to achieve its predetermined objectives. (Juneja, 2015)

The final step includes marketing optimization. “Marketing Optimization is the process of improving the marketing efforts of an organization in an effort to maximize the desired business outcomes. Marketing optimization is performed on each individual marketing tactic employed, as well as optimizing the fit of those tactics into the marketing strategy as a whole” (Marketingoptimizer, n.d.).

3 METHOD OF RESEARCH

This chapter presents literature on the research methodologies. We also illustrate how personas are generated by using those methods. Furthermore, this chapter highlights a discussion on the type of data as well as the sources of data collection.

The case study approach was selected as this research aims to critically and empirically evaluate a framework (Fig.1.0). According to Yin (2009) case study is not only favorable in social sciences but also in the field of economics because unlike some other qualitative methods, case study draws from multiple data sources and helps in describing in more depth and with broader context. According to Ridder (2012) “A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. This thesis aims at providing a smart solution to companies through which they can increase their ROI with the help of targeted advertisement, which can only be achieved through case study.

To answer the research question effectively, qualitative method is chosen for this case study. According to Berg (2009) qualitative research method gives in-depth understanding of heterogeneous and complex characteristics and it refers as “meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things”.

This research was carried out in a company named “QuietOn Oy”, due to confidential issues regarding customer data we are unable to include exact numbers. We will focus on validating the process explained in the framework (fig 1.0).

3.1 Data collection

Data for personas can be obtained from various sources in different forms. In this research, we use the classification of Pruitt & Adlin (2006) and Cooper et al. (2014). The data for persona generation can be qualitative or quantitative and can be obtained from primary sources or secondary sources. The method of collecting data determined the differentiation of data source.

A primary data source is an original data source, that is, one in which the data are collected firsthand by the researcher for a specific research purpose or project (Salkind, 2010). while secondary data are preexisting data that have been collected for a different purpose or by someone other than the researcher (Given, 2008).

We have created axes of a table in table 3.1 to illustrate the type of data with sources. Further, we will we discuss in detail each type

Table 3.1: Illustrate the type of data with sources

	Qualitative data	Quantitative data
Primary data	Workshop with Sales teams and Marketing team.	Webshop Sales data
Quantitative data		Facebook Analytics Google Analytics

3.1.1 Primary qualitative data

Primary qualitative data is the qualitative data which informs us about the qualities of the population. Primary qualitative data can be obtained from expert interviews, competitor analyses or interviews of employees. (Cooper et al., 2014; Nielsen, 2013)

Primary qualitative data is used for in depth examination of the use of context and gives the ability to understand with more clarity (Cooper et al., 2014). The main disadvantages of getting primary qualitative data is that it requires time and it is resource intensive which leads to small sample set. (Mulder & Yaar, 2007). Due to intensiveness of the resources

the goal of primary qualitative data is to get better understanding of the user rather than broad understanding of the user.

According to Cooper et al. (2014), in persona research, primary data should be primary qualitative data because it helps to understand the behavioral elements in depth and give better explanation. Whereas, Pruitt and Adlin (2006) argues that qualitative data is needed for rich description of personas and secondary data source should be quantitative in nature.

We collect primary qualitative data from from the company's own sales and marketing team. Special 6-hour workshop was designed in order to generate features extraction about the users. The real-time experience of sales team helped us to understand the nature of the customers and provide useful information regarding customers. A total of 4 sales team member participate in that workshop which also included sales director of the company.

3.1.2 Primary quantitative data

The numerical data which is collected directly from a user is known as primary quantitative data. The primary data can be collected from various sources including surveys, questionnaire, interviews etc. (Mulder & Yaar, 2006) but in the era of digitalization we can also collect primary quantitative data from the online sales database. In this study, we collect primary quantitative data from the company's own webshop sales database. Whenever someone purchases the product, they give important information like payment method, location, and email addresses. This information helped us to identify the regions of most buying consumer and help to estimate the average price of our customer's houses through customer intelligence. These prices give us the idealization of household income or lifestyle of our consumer.

Primary quantitative data give us the insights of who our customers are, what they are and why they purchase our products. (Mulder & Yaar, 2006) The information of what customers are doing and why they purchase can differ significantly.(Mulder & Yaar, 2006)

Quantitative data helped in the reduction of human bias in the persona generation process. The categorization of users can be done from data analytics methods which help in research. Some of the researchers argue that the quantitative data still contain human bias

but they also acknowledge that the amount of bias in quantitative data is less than qualitative data. (Mulder & Yaar, 2006). Mulder & Yaar (2006) also find that personas are easier to justify when they are backed by quantitative data.

3.1.3 Secondary quantitative data

The numerical data which is collected by another researcher or agency for different purposes is known as secondary quantitative data. Secondary quantitative data is obtained from various sources e.g. census data or scientific literature (Pruitt & Adlin, 2006). In digitalization data of consumer can be obtained for third-party tools like Google Analytics, Facebook Analytics and other analytical tools. These tools track user into webshop and give us meaningful data about the user.

In this study, we used secondary qualitative data obtained from Google Analytics and Facebook Analytics. This data provided us valuable information of user i.e. device of the user, what is their average spending time, what are their interest and buying behaviours. This data also helped in identifying the potential age segments of the users as well. These tools provided real-time data of users and helped in the optimization of marketing strategies.

Advantages of secondary quantitative data include understanding consumers more deeply by giving insights of consumers about what they are doing. (Mulder & Yaar, 2006; Pruitt & Adlin, 2006). The most important benefit of secondary quantitative data is that it is easily available (Cynthia Putnam, Rose, & Johnson, 2009) and mostly it does not require much cost. In digitalization, tools like Google Analytics and Facebook Analytics do not require any cost to obtain consumer data.

3.1.4 Data collection for personas generation

Persona data collection is based on primary qualitative data, primary quantitative data and secondary quantitative data as discussed above. Data collection was carried out with the help of data analytics tools like Google Analytics, Facebook Analytics and webshop sales database. Qualitative aspects of personas were generated from the designed workshop with sales and marketing team of QuietOn Ltd. Based on Brangier

& Bornet (2011), we developed Table 3.2 which illustrates the components of persona, the sources of data collection and theoretical based sources.

Table 3.2: Adopted from Brangier & Bornet (2011)

Component	Example	Literature Based Source	Data collection source
Persona Identity	Name, Photo, Illustration	Cooper (2004)	Workshop
	Email, Current Address	Pruitt & Grudin (2003) Kurosu (2009)	Sales database
	Tagline	Pruitt & Grudin (2003)	Workshop
	Sex, Age	Nielsen (2002)	Facebook Analytics
	Sociological aspect: social status Occupation, Education, Hobbies	Nielsen (2002), Goodwin (2001), Pruitt & Grudin (2003), Olsson (2004)	Google Analytics and Facebook Analytics
	Psychological Aspects: Character and personality	Nielsen (2002), Olsson (2004)	Workshop
	Income	Olsson (2004)	Facebook Analytics
	Geographic aspect: world region	Olsson (2004)	Google Analytics, Facebook Analytics, and sales database
Attitude and behavior	Emotional goals, Life goals	Goodwin (2001), Nielsen (2002)	Workshop
	Emotional Characteristic of user	Olsson (2004),	Workshop

Components of personas like name, photo, taglines, emotional goals and characteristics were obtained from the workshop with sales and marketing department. In this area we considered various data to determine the potential markets in order to relate the specification of the user.

Components like sex, age and locations were based on the data collected from Facebook Analytics and Google Analytics. This data comes from multiple existing campaigns. The data is obtained from the date range from January 1, 2018, to July 31, 2018.

4 RESULTS AND ANALYSIS

The main question of this thesis is: How can data analytics be used for creating consumer personas? But more specifically

1. How we can design a process of creating personas based on data analytics?, and
2. How can we validate the process of developing personas?

In this chapter, we illustrate the process of segmentation, demonstrate created personas and testing of those personas with marketing strategies. Section 4.1 provide segmentation process, section 4.2 represent created personas, and Section 4.3 illustrates how we build communication messages on Facebook according to those personas, and present effect of those marketing efforts to sales.

In this research process, we created four personas which are backed by data analytics and workshop with sales and marketing team. We have used the process described in the framework (fig 1.0). The data was extracted from the date range of 1-January-2018 to 31-July-2018. A total of 64,088 users was analyzed from Google Analytics and Facebook Analytics. Approximately 6000+ customers were analyzed from the sales database.

4.1 Segmentation process

In this research, we combine the powers of Facebook Analytics and Google Analytics to obtain valuable consumer data. These platforms equipped us with demographic data, affinity data and behavioral data which we used to create personas. Companies own sales database give us ability to do locational analysis of our buyers. In this section we write about how we extract data from analytical sources and how we make segments of from that data.

4.1.1 Facebook insights

The Facebook Analytics tool is known as Facebook insights. The data was extracted from the date range of 1-January-2018 to 31-July-2018. We use Facebook insights for getting two different data: 1) Data of people who are engaging with Facebook page and website 2) Import sales-database sheet to see the customer intelligence report. First data gave us the information of our potential customers, whereas, second report gave us valuable information related to our existing customers by its intelligence tool.

The first step to fetch information was the implementation of Facebook tracking code into the website. After implementing Facebook tracking code into website we make Facebook insights account. From Facebook insights we can create custom audience reports and can view detailed information of our audience from audience insights tab. The section audience insights include filters through which we can obtained relevant information about audience. The example of audience insights is given below:

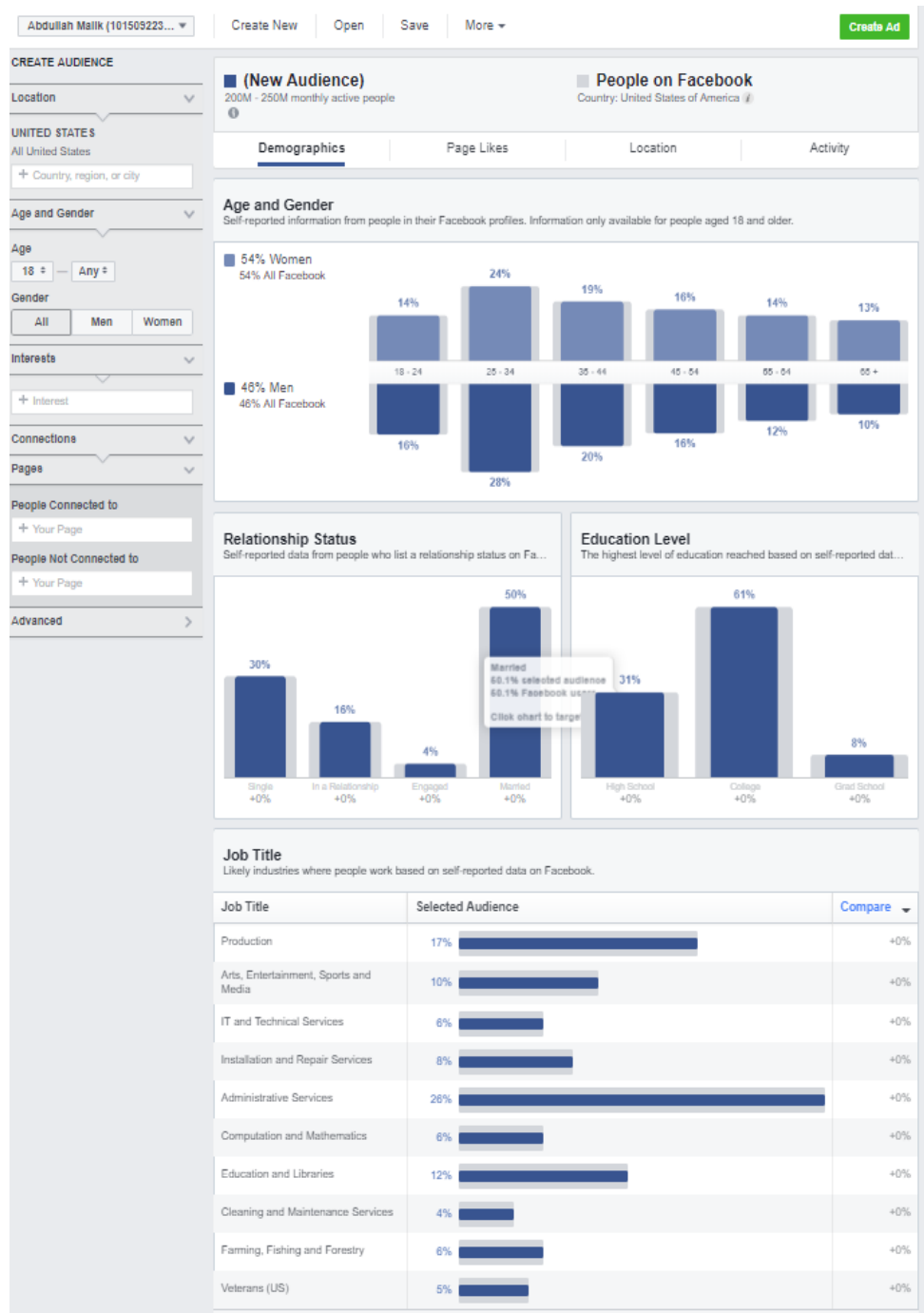


Figure 4.1: The example of Facebook audience insights

From figure 4.1, we can witness that Facebook audience insights provide valuable information regarding audience geographic locations, demographics, interests, gender, job titles, and relationship status. The most important feature of Facebook insights is to make custom audience which is useful for customer intelligence. By putting information of existing customers, we can get information about them and then analyze

them in audience insight tab. This feature also provides us information about their household income and the idea of their digital purchases. Figure 4.2 represents example of household income tab and purchase tab in Facebook audience insights.



Figure 4.2: Illustration of household tab and purchase behavior in Facebook insights

After identifying key data about our customer, we fetch data into excel report and makes segments. With the help of pivot table, we identify most promising set of potential customers, for example: people with age range 25-30, living in California USA, household income 200,000+ \$, interested in innovation, IT engineer, and with single relationship status most likely be out potential customer. These subset helps in persona development process.

The most important aspect of Facebook insight is to get behavioral data of customers. In past, behavioral data was meant to be qualitative data but now with the help of data analytics we can track the behavior of customer in numerical values. This feature provide power to marketer to make and run their marketing efforts and narrow down their target audience.

4.1.2 Google Analytics

Google Analytics is also a very useful tool to know the characteristics of potential customers. It gives the information regarding user who landed into website landing page and scroll the website deeper into sub-pages. From Google Analytics the data was extracted from the date range of 1-January-2018 to 31-July-2018. The start of Google Analytics was the same but the company already implemented tracking code into the website. Which helps us to track consumer decision journey and transactional records. This tracking code was very helpful in order to know which type of customers spend the most in our webshop.

Google Analytics give us important information regarding demographics, interests, devices users used, affinity and in-market segments. Figure 4.3 illustrates the dashboard of Google Analytics.

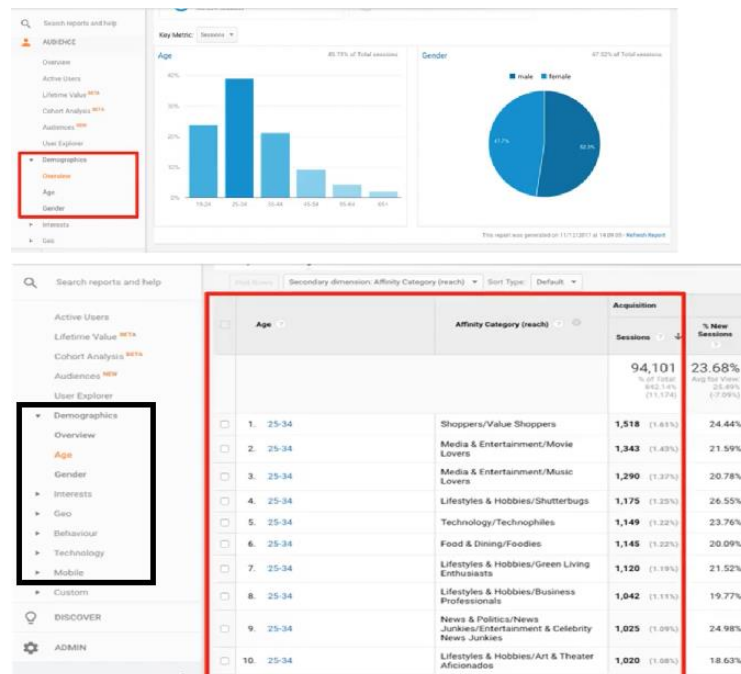


Figure 4.3: Illustration of Google Analytics dashboard

We fetched user data from Google Analytics in the form of Excel sheets and then classify that data with no. of users and to find the key elements. We used ecommerce conversion rate as independent variable while variables like age, gender, in-market segments, location, device category and mobile device were used as independent variables to see which segment gives more conversion. The example of one set of segments is given below:

Table 4.1: Represent example set of segments

Characteristics	Features	Conversion Rate
Age	55-65	0.92 %
Gender	Male	0.57%
In-Market Segment	Travel/Air Travel	1.17%
Location	Australia	2.17%
Browser	Chrome	0.95%
Device Category	Tablet	0.86%
Mobile Device Info	Apple iPad	1.17%

After analyzing data, we made set of segments of our potential customers from Google Analytics data.

4.1.3 Final segments for personas development

Our initial steps were to make sets of segments from Google Analytics and Facebook insights. After making sets of segments we compared those sets and made set of potential personas. To compare the two sets of segments we applied general rule of probability as:

$$Pfs = P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

Here, Pfs = Final segment

$P(A)$ = Segment from Facebook insight

$P(B)$ = Segment from Google Analytics

The rationale behind applying general rule of probability is to get more and more close to our real user. figure 4.4 represents the method of making potential segment for persona as Venn diagram. Set A represent segment made from Google Analytics and set B represent segment made from Facebook Analytics. The highlighted portion shows the similarity between both sets which makes our potential segment for persona.

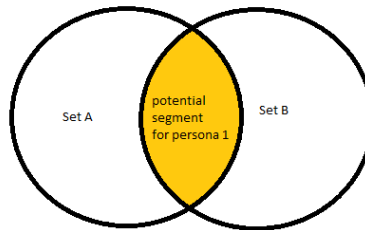


Figure 4.4: Method of potential segment for persona

Qualitative information like motivation, tagline, personality and biography of personas were deducted from specially designed workshop with sales and marketing department. The rationale behind that meeting was that people from sales and marketing department deals with audience in natural environment so we decided to put their experience in our research for validation. Table 4.2 represents different characteristics of personas, features extraction and sources from where we extracted those features in the development of personas. We used company's sales-database for locational analysis.

Table 4.2: Sources of data for feature extraction

Characteristic	Features	Source
Attitude and behaviour	Tagline, Bio, motivation and personality	Workshop
Demographics	Age	Facebook Analytics
		google analytics
	Gender	Facebook Analytics
		google analytics
	Household income	Facebook Analytics
	Location	Facebook Analytics
		google analytics
		Webshop Database
	Job Title	Facebook Analytics

	Relationship status	Facebook Analytics
Behaviour	Buying behaviour	Facebook Analytics
	Technology usage	Google Analytics
	Intrests	Google Analytics

As our research includes development of marketing strategy in online landscape, we keep all the targeting options in mind while making segmentations. After the development of multiple segments, we moved to our second phase of making consumer personas.

4.2 Developed Segments

After analyzing the data and combining datasets of Facebook Insights and Google Analytics we came up with 4 major segments. These segments were the most important combination of potential customers. These developed segments helps in the creation of personas and are as follow:

4.2.1 Segment 1

In segment 1 we choose United States of America as a location because of the fact that most of our sales comes from United States of America. After analyzing data, we came to know that most of the user with age range 25-35 buys the most and most of them use iPhone. The data also reveal that most of our customer were top level management personal or engineers.

Segment 1 contains following information:

1. Location: United States of America (USA), this location was selected because we got 1.21% conversion rate form USA, specially form technology hubs like California
2. Age range: 25-35, this age range was selected because of the reason that we got 0.60% conversion rate from this age group selected from United States of America.

3. Gender: Male and female, we got 0.38% conversion rate from females and 0.46% from males from United States of America. In this case both genders were meant to be equally importance.
4. Relationship Status: Single and married, there was no significant difference between these two therefore both were taken in account.
5. Technology usage: Apple iPhone, there were 0.41% conversion rate comes from Apple iPhone while Safari (in-app) had 1.89% conversion rate. Both results show the importance of Apple mobile phone.
6. Interest: Higher amount of percentage shows its interest in the area of innovation, innovative technologies, smart solutions, gadgets and startups.
7. Job titles: Software/business & productivity software, top level management and venture capitalist. These group of job titles have highest number of conversion rate.
8. Buying behavior: Paypal, mastercard and visa debit card. These set of payment methods was widely used by people from United States of America
9. Household income: €200,000 - €300,000, people with this range of household income have higher ratio of visitors from United States of America. It is noted that currencies were converted into Euros.

4.2.2 Segment 2

In segment 2 we choose China as a location because most of our sales comes from China after United States of America. After analyzing data, we came to know that most of the user with age range 25-35 buys the most and most of them use android devices. We found very interesting fact that most of customer like discounts or coupon codes.

Segment 2 contains following information:

1. Location: China, this location was selected because it was the second highest with respect to conversion rate. We got 0.98% conversion rate from China.
2. Age range: 25-35, there was 0.57% conversion rate from this age group selected from China.
3. Gender: Male and female, we got 0.31% conversion rate from females and 0.52% from males from China. Although the conversion rate of females was less than men, females have the tendency to buy the product as well.
4. Relationship Status: Single and married, there was no significant difference between these two therefore both were taken in account.
5. Technology usage: Chrome and Android. The reason behind selecting these technologies was their higher conversion rate.
6. Interest: Higher amount of percentage shows its interest in the area of coupon code, discounts, innovation, gadgets and pre-sales.
7. Job titles: employee, higher number of visitors came from China represent the segment of employee in job titles.
8. Buying behavior: Online payments and value shopper. The representation of value shopper from China was very dominant and most of them bought through online available sources.
9. Household income: €10,000 - €20,000, people with this range of household income have higher ratio of visitors from China. It is noted that currencies were converted into Euros

4.2.3 Segment 3

In segment 3 we choose Canada as a location. After analyzing data, we came to know that most of the user with age range 30-45 buys the most. In this segment we include Edge because overall Edge technology gave us very significant conversion rate.

Segment 3 contains following information:

1. Location: Canada, this location was selected because of its higher conversion rate.
2. Age range: 30-45, there was 0.74% conversion rate of this age group selected from Canada.
3. Gender: Male and female, we got 0.44% conversion rate from females and 0.57% from males from Canada.
4. Relationship Status: Single and married, there was no significant difference between these two therefore both were taken in account.
5. Technology usage: Edge, Edge technology gave us 1.27% conversion rate overall in the world. We don't want to exclude this segment because of its importance.
6. Interest: Higher amount of percentage shows its interest in the area of lifestyle magazine reader, innovation, and gadgets.
7. Job titles: Top level management, employees, and service management have higher number of visitors came from Canada.
8. Buying behavior: Online payments.
9. Household income: €300,000 - €400,000, people with this range of household income have higher ratio of visitors from Canada. It is noted that currencies were converted into Euros

4.2.4 Segment 4

In segment 4 we choose United Kingdom as a location. After analyzing data, we came to know that most of the user with age range 30-50 buys the most and they show their interest in lifestyle magazines.

Segment 4 contains following information:

1. Location: United Kingdom, higher amount of sales were coming from United Kingdom.
2. Age range: 30-50, there was 0.92% conversion rate of this age group selected from United Kingdom.
3. Gender: Male and female, there was no significant difference between male and female in term of conversion rate.
4. Relationship Status: Single and married, there was no significant difference between these two therefore both were taken in account.
5. Technology usage: iOS users.
6. Interest: Higher amount of percentage shows its interest in the area of lifestyle magazine reader and innovation.
7. Job titles: Top level management, employees, and service management have higher number of visitors came from United Kingdom.
8. Buying behavior: Online purchasing.
9. Household income: €1000, 000 - €2000, 000, people with this range of household income have higher ratio of visitors from United Kingdom. It is noted that currencies were converted into Euros

After making segments, the next step was to make personas according to these segments. These segments help in persona creation as they are enriched with valuable information.

4.3 Created personas

In this research process, we created four personas which were backed by segments developed in section 4.1 and workshop with sales and marketing team. We have used the process described in the framework (fig 1.0). After segmentation process, we designed personas based on each final segment. The basic information of each personas is given in table 4.3.

Table 4.3: Basic information of each personas

Persona name	Demographics		Motivation	Behaviour
Tech Geeks	Name	Steven Wilson	Tech Early adopter	willingness to try and adopt new things
	Age	30	Innovation gadget hunter	get inspire from new technology
	Location	San francisco, USA		
	Work	IT industry	inspired from innovation	
	Marital Status	Married		
Value Shopper	Name	Dawes Wong	Improving life quality	seeks discounts
	age	26		apply "think before purchase" policy
	Location	Beijing, China		
	Work	call center	securing all the basic necessity of life	
	Marital Status	single		
Family with newborn baby	Name	Emma Stone	trying to give all the best things to baby	read motherhood blogs
	age	29	Working life balance	focus on trends
	Location	Toronto, Canada		prefer purchase online
	Work	Doctor		try to be a great mom
	Marital Status	Married		
Luxury-oriented	Name	Angela Kate	improvement of life quality	attract with beautiful ads and designs
	Age	40	find unique innovation and beautiful designs	follow principle "high price underline great quality"
	Location	London, Uk		
	Work	Hotel owner	status enhancement	Follow social celebrities
	Marital Status	Married		

4.3.1 Tech geeks

People who fall in this persona have tech oriented mindset. They prefer new products and help companies to bring innovation. These people read tech blogs and keep themselves up-to-date with latest trends and news. Image 4.5 present tech persona.

Demographics: We named this persona personality as “Steven Wilson” with age 30. Steven Wilson is married and lives in San Francisco, USA. As he lives in tech city he is very much compelled to new innovation. He is working as a programmer in the game industry. His attitude towards buying leads him to early adopter. Image 4.1 illustrates the generated persona for tech geek.

Motivations: Steven is very much motivated towards new technologies and innovations. He keeps himself up-to-date with latest gadgets, new technologies and upcoming innovations. He usually invests in crowdfunding websites like Indiegogo and kickstarter so that he get the latest innovation first. He also reads blogs on new technologies, upcoming innovations and cool gadgets reviews.

Behavior: Steven is a cool guy who likes new products and help companies in their process of bringing innovation. He also purchases products in pre-sales stage so that companies can benefit from initial earning. He also gives humble and realistic feedback for products to companies so that they can improve and enhance their products. He usually purchases products online because of the shortage of time in his daily routine. He uses his analytical thinking skills to judge new products.

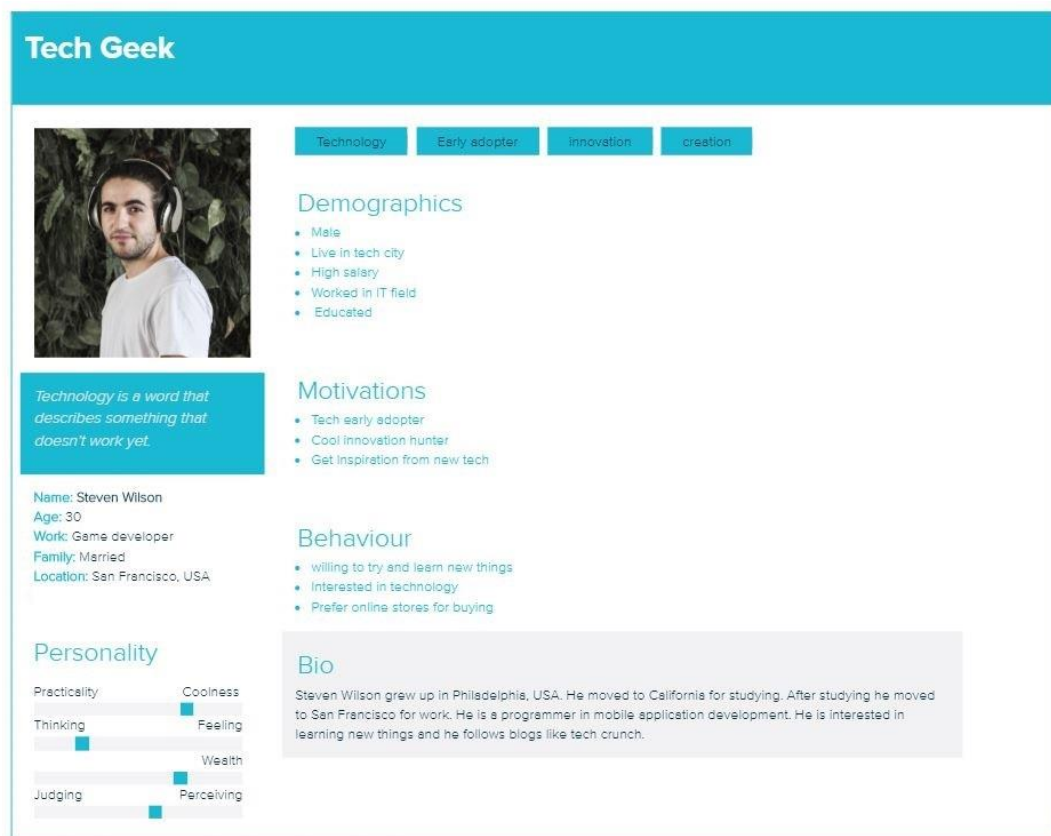


Figure 4.5: Persona for tech geek.

4.3.2 Value shopper

People who fall under value shopper persona prefer discounts. They always seek discounts or coupon codes when they want to purchase something. These people have good knowledge about when and where there are discounted items in the store. They follow coupon websites and subscribe various magazines which give information about discounts and sales. People in this persona compel more with advertisement which promote discounts as they perceive that this is the best time to buy this product. Image 4.2 illustrate value shopper persona.

Demographics: We named this persona personality as “Dawes Wong”, he is 26 years old and lives in Beijing, China. He is working in the call centre. Dawes Wong came to Beijing four year ago from a small town in China. He is single but seeking for women to marry. He is an average income earning person and trying to excel in his life.

Motivations: Dawes tries to manage living in the big city and is motivated towards sales and discounts. He seeks discount coupon from various coupon websites in China. He is trying to improve quality of life, but he is struggling within competitive environment. To stay alive in competitive environment he buys products when they get cheap so that he can improve his life standard and enhance productivity in his daily affairs.

Behavior: Dawes likes discounts and sales. He is quite practical in his shopping sense as he sees the practical implementation of things. He buys those products which contribute to his improvement in his daily life. Dawes attracted towards advertisements so in his buying behavior he perceives things more than judging them.

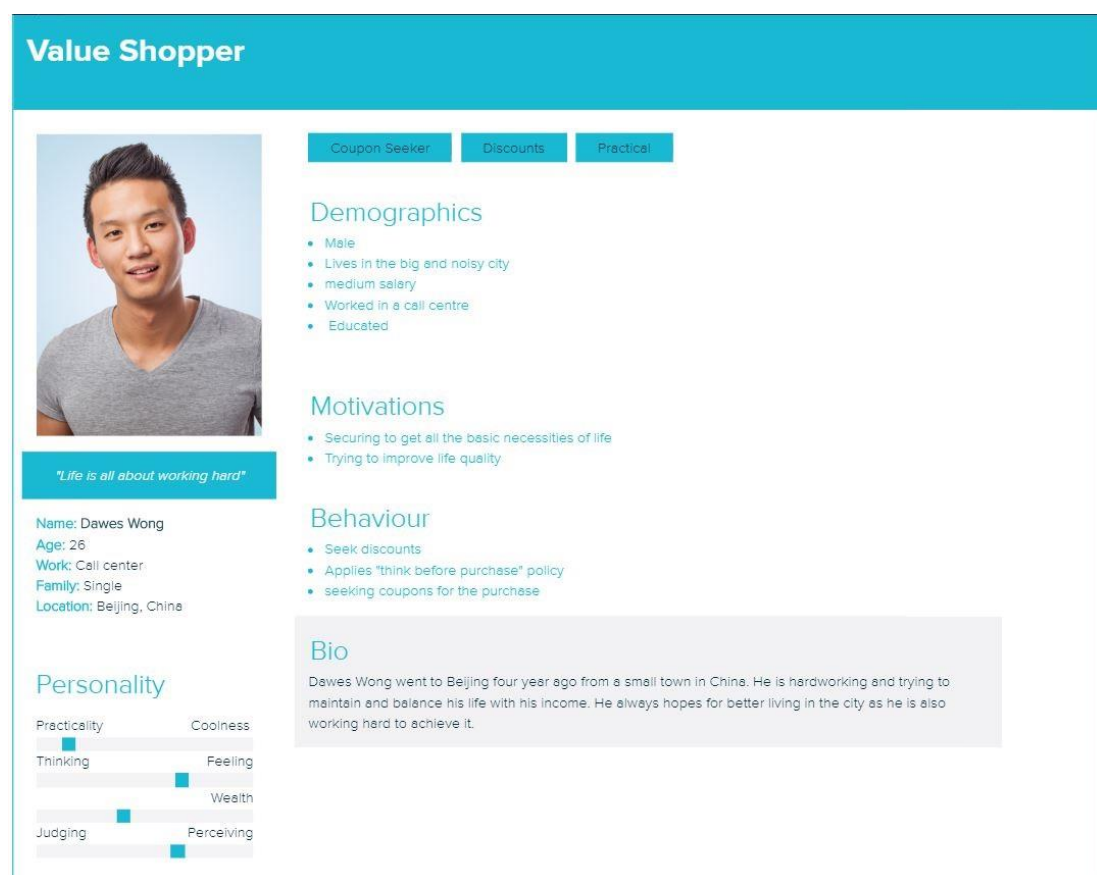


Figure 4.2: Illustrate value shopper persona

4.3.3 Family with new born baby

People who fall in this persona are family oriented and they have small kids. They are having kids with age 0-2 years. They are struggling with sleep as they are taking care of kids and managing their daily routines. These people are in the initial years of their marriage and they are experiencing early year's parenthood. As our device is based on active noise cancelling technology which blocks sounds around them while sleeping, we hope that this is the best device for this persona. Couple can take easily sleep turns and take care of their babies. Image 4.3 illustrate family with newborn baby persona.

Demographics: We named this persona personality as “Emma Stone”. Emma is a married women and a professional doctor and she is having a one-year-old baby. She lives in Toronto, Canada. She is trying to balance her life in all directions. Due to tiredness, Emma wants to get full sleep so that she can actively work.

Motivation: As a mother her main motivation is to take care of her baby. She wants to give everything to her baby. She is also motivated in her working life, so she is trying to balance her daily routine in all direction. She wants to give time to work, home and her baby as well. She is struggling with sleepless nights due to her baby.

Behavior: As she is in the early stages of her parenthood, she is reading motherhood blogs and magazines. She is very much curious about her child. Due to time shortage she prefers to buy online. She seeks practicalities in product, how effective they are and also read the reviews of people while purchasing the product. She is quite focused with the trendy product relating to parenting.

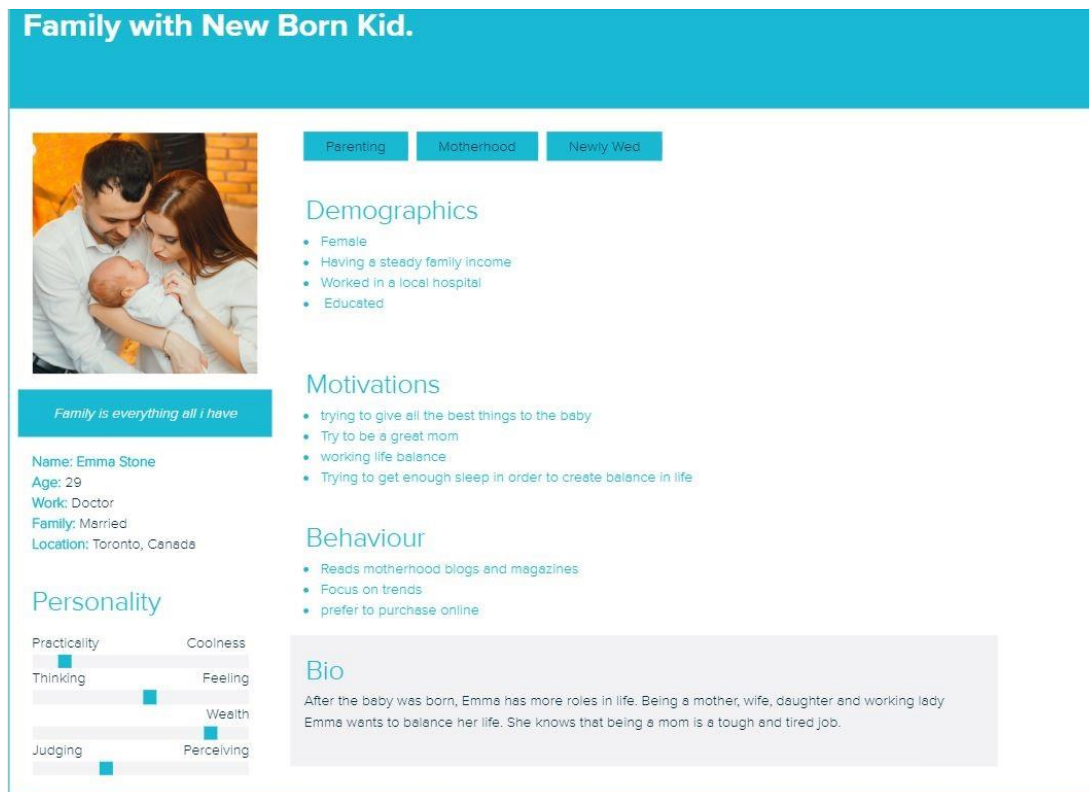


Figure 4.3: Illustration of a family with newborn kid persona

4.3.4 Luxury persona

The people who fall in this persona are rich and having hi-end lifestyle. These people like to maintain their lifestyle and prefer costly products. These people react to beautiful packaging and are inspired by beautiful ads. They believe that high price underlines high quality.

Demographics: We named this persona personality as “Angela Kate”, she is 40 years old woman, works as a hotel owner. She is married women and lives in the center of London. She received her MBA degree from Oxford University. She likes to maintain her lifestyle and prefer costly products.

Motivation: Her motivation lies in the enhancement and maintaining her status. She wants to purchase hi-end products with beautiful packing. She is motivated towards innovative products which enhance her life quality.

Behavior: She purchase hi-end products and she is attracted towards high prices. She believes that high price underlines great quality. She follows social celebs and follows trending youtubers and instagramers which gives lifestyles enhancement advices. She is attracted towards coolness of products rather than practicalities. She perceives product quality from their advertisements and also follows social celebrities advices.

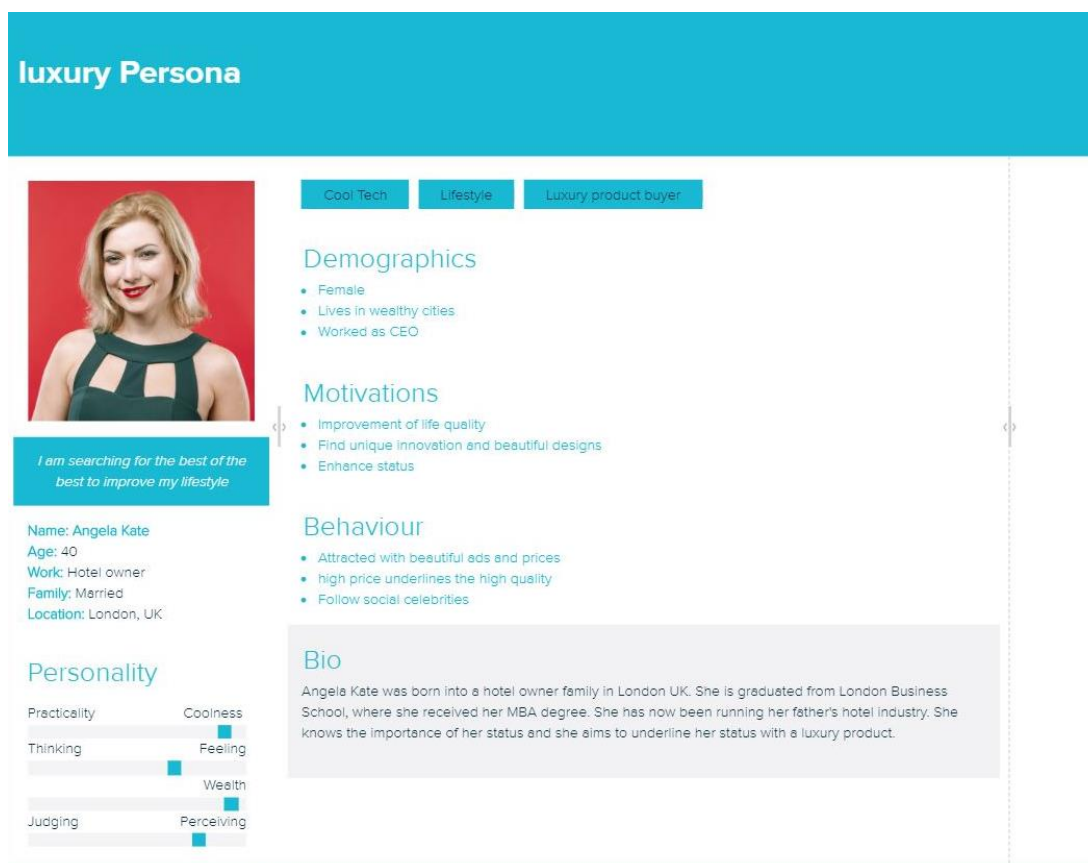


Figure 4.4: Illustration of Luxury persona

4.4 Testing and optimization

In this section, we will test developed personas by establishing marketing strategies. These marketing strategies were implemented in the Facebook landscape in the form of paid advertisements. After successful implementation of marketing strategies on Facebook we closely monitored advertisements. Successfulness of advertisements were based on sales enhancement in the webshop. Following we will discuss each persona with respect to developed marketing strategy.

4.4.1 Tech geek persona

The marketing strategies for tech green persona was designed for early adopters. The objective of marketing strategy was conversion. We made targeted ads with the objective of conversion. We wrote the text keeping in mind of tech geek persona and tried to add words which attract those people. The text is given below:

“Nokia veterans developed the only Active Noise Cancelling device suitable for sleeping. These world’s smallest patented ANC earplugs have 20 hour battery life and best in class performance. Great reviews from tech media and test users’ praise of the device have led to global pre-orders exceeding 8000 units. Place your order now and be among the first to receive this amazing innovation still in pre-sales price!”

In this communication message, we included an origin of the team, specialties of product, key selling points, the success of product and reviews from tech magazines to get the attention of people. Image 4.5 illustrates advertisement in facebook for tech geek persona

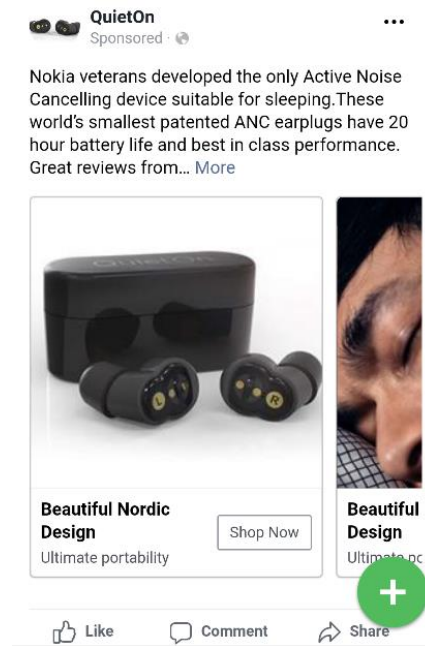


Figure 4.5: Illustration of a Facebook ad for tech geek persona

In this advertisement, we selected the key location of tech hubs in the United States like Amphitheatre Parkway, San Jose, Infinite Loop, Cupertino, McCarthy Blvd, Milpitas etc. In the first phase, we selected 51 locations in the United States. A carousel image ad was made with 5 images which contain communication headlines like Optimized for Sleeping, Cancel Snoring Sounds, Acclaimed by Tech Writers, Nordic Innovation Masterpiece and Developed by Nokia Veterans. We also selected the age range of 25-35 as we believe that tech geek persona contains people with this range.

We ran targeted ad for one month and we got 8% increase in our sales to form those selected areas. After one month we scaled up the ad range and added 85 more locations in it as the company wanted to keep on running this ad. This persona was successful in getting an increase in conversions.

4.4.2 Value shopper

The marketing strategy for value shopper persona was designed to get conversions. This strategy focuses on people who are interested in discounts. The objective of our

marketing campaign was to get conversion as well as to get email addresses of people. In this perspective, we designed special coupons for people. We gave 10% discount on those coupons and wrote the communication message which attracts value shoppers. The communication message is given below:

“Get 10% discount with new innovative Active Noise Cancelling Earplugs. Activate your coupon code by three simple steps:

- 1) Click on the link below*
- 2) Submit your email address*
- 3) Press Submit button”*

This was an action based communication message. It was a single image with text ad which gets the attention of people (see: image 4.1). The word presales are highlighted in order to advocate people that right now we are in the pre-sales stage.



Figure 4.1: Picture used in value shopper persona ad.

We ran this ad in the Asian market with the behavioral segment of value shopper in Facebook ad manager. We selected age range of 25-40 as we believed that people with this age will react the most.

The duration of this advertisement was 15 days. After 15 days we collected 28 email addresses and got 25 conversions with coupon code. We also analyzed the strange behaviour that three people did not redeem the code. After 15 days of running we

optimized our campaign and changed the range of age as people with an age range of 45-40 did not respond to our ad well. Now we selected the age range of 25-35 and then we run advertisement again. After analyzing 15 more days we closed this campaign as it did not give us much profit.

Learning outcomes:

After one month of the ad running, we learned that this persona people are not interested in pre-sales. For pre-sales people have to wait for two months to get the product. But we also learned that this persona has huge potential when the product will be available as we have seen good engagement rate for this ad set.

4.4.3 Family with new born baby

The marketing strategy for the family with newborn baby persona was designed to get video views. A specially designed testimonial short video was designed for a communication message. The objective of our strategy was to get brand awareness. The advertisement contained short video of length 14sec with text in the description. Image 4.6 illustrates the ads preview of Family with newborn baby persona. The text of this ad is given below:

“QuietOn Sleep solves one of the biggest problems that couples have. According to studies, 41% of snorers engage in regular night-time tussles with partners. QuietOn Sleep is saving marriages with one of its kind Active Noise Cancelling earplugs designed for sleeping which drown out snoring and other ambient noises. Buy Now: <http://bit.ly/2I2bu01>.”

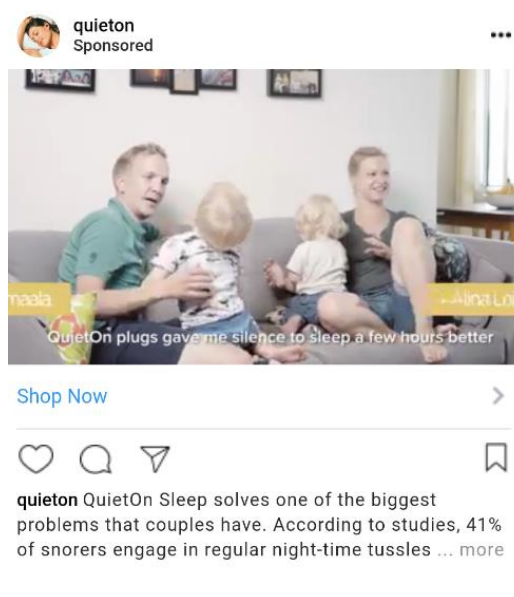


Figure 4.6: Illustrate ad preview of a family with newborn baby.

This ad is set for the whole world by implement the following logic in behavioural segmentation in Facebook ad manager:

Logic = Engaged or married AND parents with (0 to 2 year) child

According to this logic, the ad was shown to those people who are engaged or married and they have 0 to 2-year kid. This well-specified ad gives us cost-effective and high ROI. The period of this ad was one month and we got 1.2M views with the rate of 0.02 euro per view. After the analysis of one-month ad running, we kept on running this ad for more months as we also observed the drastic increase in sales as well. This ad also unlocked new market opportunity for a company as they think of targeting retail shops which carries baby products after the final release of the product.

4.4.4 Luxury persona

We did not make any testing for this persona due to time constraints and lack of resources. After a final meeting with CEO, we come to the point that this persona is best for PR and after the release of the product.

5 CONCLUSION AND DISCUSSIONS

This chapter present detailed discussion on the empirical results based on extant literature and provides answers to research questions. Based on research findings, managerial and academic implications are constructed. Afterwards, reliability and validity of this case study will be evaluated.

5.1 Main findings

The main objective of this thesis is to see whether personas created through data analytics can be reliable to form marketing strategies. Based on our objective we developed a framework (figure 1.0) of research and test our framework in chapter 4. From our empirical results discussed in chapter 4, we can state that we can personas create through data analytics and they can be reliable to form marketing strategies.

This thesis enables the persona creation by extracting data from the available sources, segmenting the data and making personas with factual reasoning. Data analytics gives us the numbers so that we can assume correctly about our consumer personas. Persona creation gives us the right direction to make marketing strategies and allow us to feel the actual consumer and communicate with them effectively.

The most significant finding of this thesis is the usage of sales database data. Companies usually use sale database in operational level. This thesis suggests using that data for marketing strategies. Data from a sales database can give important information like demographics of the real audience or we can use sales database sheet to know more about our customers from customer intelligence tools like Facebook insights. The results of our thesis research also demonstrate the usage of social media analytical data also helps in identifying major customer segments by providing important data like behavioural data and demographic data.

The findings of this study suggest that personas help in sales enhancement because with the help of persona marketers can communicate effectively and give the ability to focus on the right audience. These generated personas not only help in digital

marketing but also traditional marketing efforts. It also helps UX designers to generate content which appeals real customers.

5.2 The implication of study

This case study offers a systematized framework which help marketing personnel to obtain learning from literature of digital marketing. The framework is constructed upon marketing literature and empirically evaluated through case study analysis. The findings of this case study have theoretical contributions, as well as, practical implications.

5.2.1 Managerial implications

This study offers a framework for the marketers who are striving to take competitive advantage. This study provides practical solution to marketers to create targeted advertisements and communication messages in the digital landscape.

First, this study shows the positive significance of adopting persona method for creating marketing strategies. It establishes vital importance by implementing and testing marketing strategies in the real case scenario. In today's world, "data is everything" so, by using existing data we can get more knowledge about customers. The method presented in this thesis leverages cost-effective way to understand audience deeper and to make targeted advertisements for marketers. These focused targeted ads will help them to enhance sales efficiency and give control to communicate better with the audience. Marketers can deploy personas generation as a strategy in their marketing efforts.

Secondly, this case study also aids marketers to discover more untapped markets. This case study discovers untapped market of family with new born child in chapter 4, section 4.4.3. Marketers can also discover more opportunities by adopting framework (figure 1.0).

This study also contributes to other units of business like sales, product development, communication and user experience (UX) designing. They can also create content,

make perfect pitch, design customer specific graphics and develop product according to personas. This process helps them to get more and closer to their potential customers.

5.2.2 Academic implications and future Studies

This case study provides number of theoretical contributions. First of all, as the concept of persona attracts interests of academic researchers from many fields like marketing (An et al., 2018; Revella, 2015; Stern, 1994; Wong & Wei, 2018), user experience design (Matthews, Judge, & Whittaker, 2012; Nielsen & Storgaard Hansen, 2014), and product designing (Goodwin, 2001; Smith, 1956). This case study enriches literature from the perspective of data analytics. This case study contributes to the field of data analytics and marketing by thoroughly analyzing and evaluating a successful case study. The findings of this case study emphasize the importance of following:

1. Extracting features from analyzing data from Google Analytics and Facebook Insights
2. The importance of segmentation process for persona development
3. The use of personas to design marketing strategies

Another major theoretical contribution of this study is to support the previous studies (An et al., 2018; Pruitt & Adlin, 2006) that persona creation is an important element of success for companies. There are numerous researches pursuing new ways of persona development and how to data analytics is meaningfully utilize. This research facilitates future researchers to use social media data and web analytics in multiple directions for various uses. In the world of academic literature this study helps in changing the direction of researchers towards the use of analytical data. As data is the most important factor in academic world to generate and test their hypothesis. This study gives them the way to utilize data from the freely available dataset. In a nutshell, this study also enhance the spectrum of previous persona literature by creating value to Pruitt & Adlin (2006) theory.

The creation of persona through data analytics can also unlock future researches. The invent of 5G technology and IoT technology open the doors of many new possibilities in persona research. Currently, researchers have been thinking about consumer personas or the personas of a human being. But in future research can be done to make personas of machines. The concept of machine personas in V2V technology and IoT technology will also unlock many doors for future marketers.

5.3 Research evaluation

In qualitative research, the quality of research can be evaluated in terms of reliability and validity.

The findings of this study support the creation of personas from data analytics and creation of marketing efforts from developed personas. It helps marketers to make realistic assumption about customers. The most important aspect of persona is that it challenges assumptions (Cooper et al., 2014).

5.3.1 Reliability

There are three main component which gives reliability to this study:

- 1) Level of detail in personas
- 2) Transparency in research method
- 3) Utilization of secondary data

In order to make personas more relatable, it is important to equipped personas with enough details. Details like demographics, motivations, and character type meant to be appropriate for persona. As for marketers, every inch of detail is fruitful for them. Persona need to be enriched with information to receive the reliability. Whereas, other domains like UX designing it depends on the personal experience of the designer how he sees personas.

In literature, some researcher like Cooper et al., (2014) and Pruitt and Adlin, (2006) believe in balancing the information in personas because they believe that a lot of detail minimize the reliability of personas. But, researchers like Nielsen (2004) advocate the use of personifying details in personas. Most of the study was done on persona belongs to UX designing area.

In our research, we follow the ideology of Nielsen (2004) by developing personas with details. We concentrate on the factual numbers which help us in making effective marketing strategies. The more we get deeper into the details, the more we get closer to our customers.

Reliability of this study is created by the transparency of research method. In this study we use novel approach to encounter the transparency of research method by linking findings with literature evidence. The persona should complement with the foundations prescribed by Pruitt and Adlin (2006) as it meant to be the foundation document for personas. We use the foundation prescribed by Pruitt and Adlin (2006) in our research. The development of personas was backed by academic literature. The research was carried out in company and data is utilized from secondary sources. Reliability is also created by designing special workshop with company's sales and marketing team.

5.3.2 Validity

The validity of this study is created by market test. Personas have been tested in practice and have proved effective. There are two perspective of examining the validity of this research:

- 1) Internal validity,
- 2) External validity.

Internal validity refers to validate the chosen study method in this thesis. The internal validity is examined from three angles: 1) method of creating personas, 2) the choice of data collection, and 3) the choice of evaluation of method.

In this study we choose the method of creating personas by combining and adopting the literature of personas creation process. The foundation of persona creation was adopt from the guidelines given by of Pruitt and Adlin (2006) and features were extracted from the work of Cooper (2004), Kurosu (2009), Neilsen (2002), Olsson (2004) and Goodwin (2001).

The data was gathered from company named “QuietOn Oy”, with the date range of 1-January-2018 to 31-July-2018. The validity of the data comes from implementing tracking codes and using analytics tools. The data was enough to examine and make different segments. After segmentation process, the data leads us in the formation of four personas.

Marketing strategies development and testing were chosen as the method of evaluation of the created personas. Those marketing strategies were monitored and testing on daily manner for 2 months. The success of the personas were depend on the sales enrichment. Three out of four personas were tested in controlled environment. The focus of this study was in the development of marketing strategies on the basis of developed personas.

External validity refers to the applicability of the study in the context of practice or outside of the study. The context of this study us unique, making process of developing personas as well as marketing strategies. Reliability of whole process is brought from initiating testing and optimization of established marketing strategies. This study can be applicable in other contexts with certain limitations.

The methodology of adopting analytical data in the development of personas can be limited because of the nature of the data. The development of personas were based on Pruitt and Adlin (2006) guidelines so there might be limitation if choosing another method of personas development. The effects of secondary data might not be applicable if other method is chosen.

The final persona format was established from third party tool named “Xtensio”. The features of personas were extracted from literature. Thus, results of this thesis can be pragmatic when using secondary data.

5.4 Limitation of the study

The finding of this study must be highlighted by its limitations. In this study, the empirical evaluation of the framework was based on one case company. The study suggests that consumer persona creation is possible with the data analytics, however, it is dubious if the findings can also be applied to other case scenario. Although, this study was well executed in given case but further study is required to confirm the applicability of the framework. By, experimenting and examining framework to another case company, other possible circumstances may be more relevant in the creation of personas and marketing strategies.

It is also noteworthy to state that this study did not examine the external environment of the case company such as market competition, laws, regulations and competitor analysis, with respect to marketing strategies. Future research should investigate the external context that influence marketing strategies in the digital landscape.

One another limitation for this study is the aspect in which the strategies were based on. As marketing strategies was developed and tested in Facebook. Thus we suggest that in future researches other spectrum(s) of channels should and can be used. This should be based on the type of product and the marketing strategy that the firm or organization is aiming towards. However, the study can provide a base level for future researches.

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